

Zürich - Sustainability in Urban Planning



Christoph Durban // Office of Urban Design, Zurich
Climate KIC // Summer-School 2010 // August 5th 2010



Stadt Zürich
Amt für Städtebau

„Little Big City“ in the heart of Europe





Stadt Zürich
Amt für Städtebau

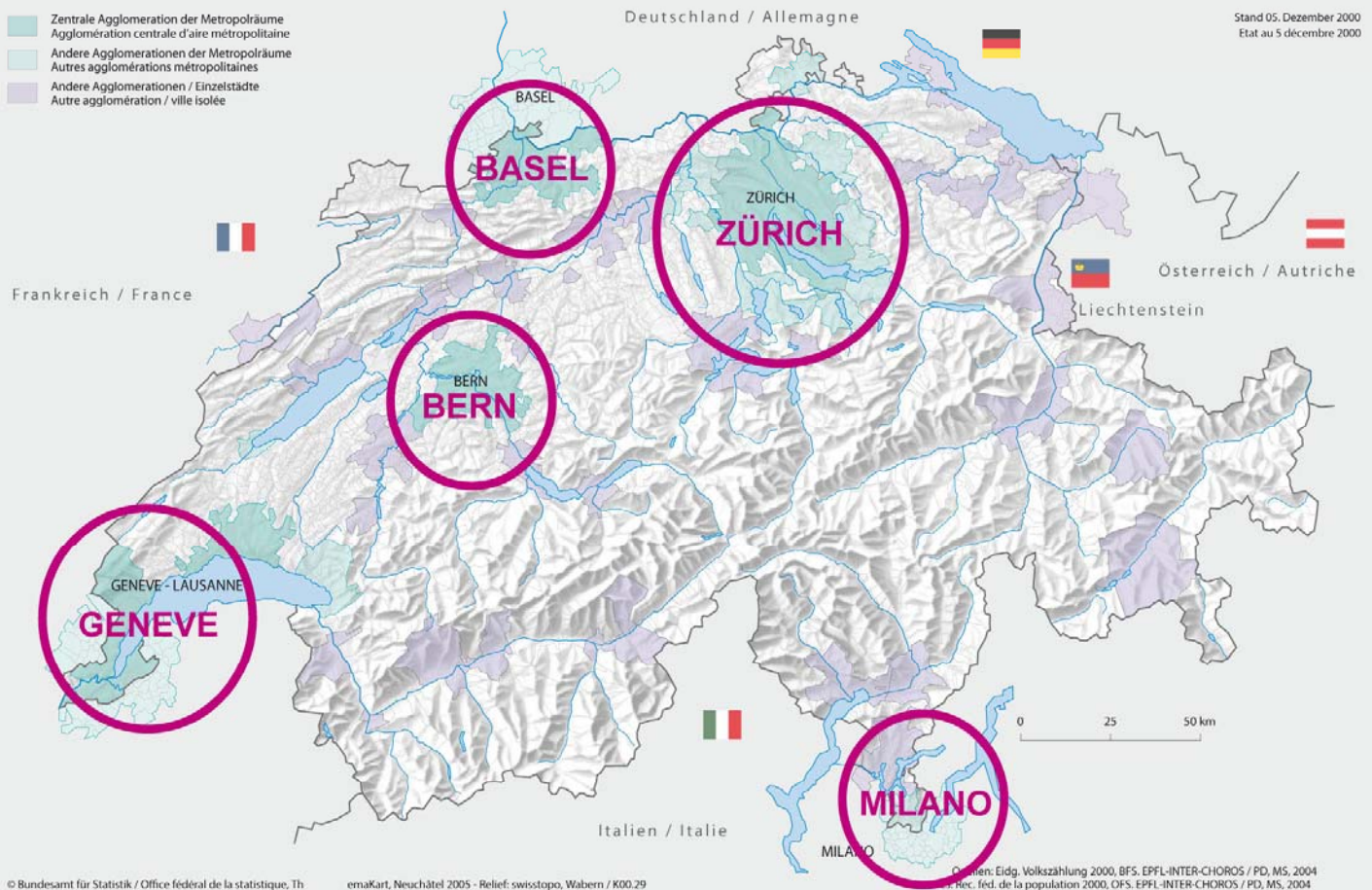
Climate KIC Summer-School 2010, August 5th, 2010
Page 3



Five metropolitan areas

5 Metropolräume
Les 5 aires métropolitaines

- Zentrale Agglomeration der Metropolräume
Agglomération centrale d'aire métropolitaine
- Andere Agglomerationen der Metropolräume
Autres agglomérations métropolitaines
- Andere Agglomerationen / Einzelstädte
Autre agglomération / ville isolée



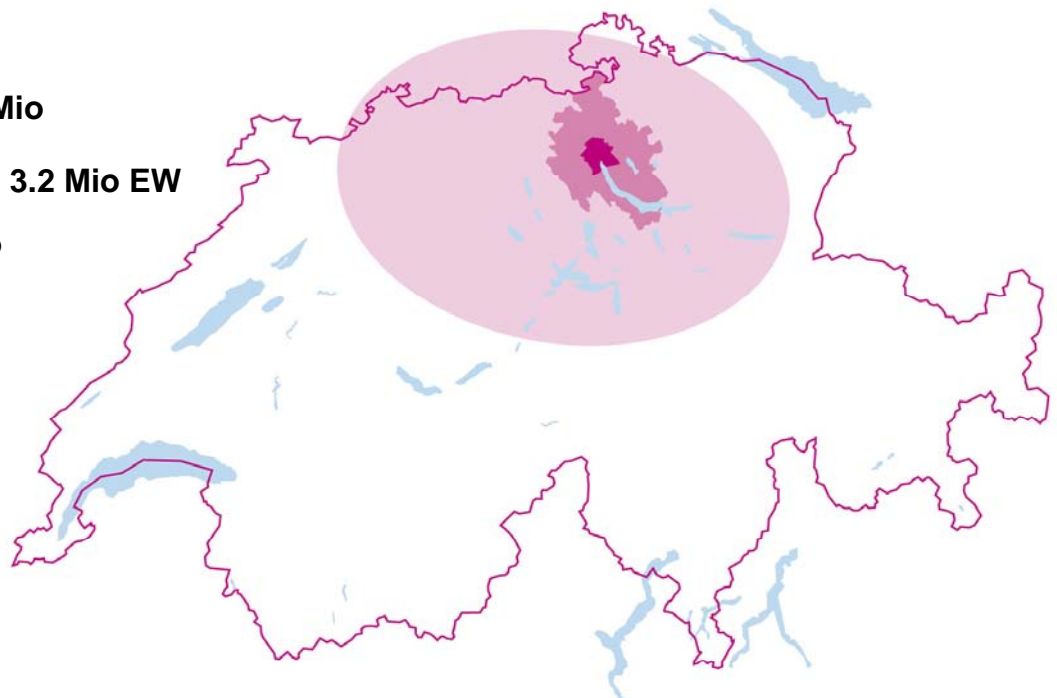
Population

Zürich City: **382'000**

Agglomeration: **1.2 Mio**

Greater Zürich Area: **3.2 Mio EW**

Switzerland: **7.5 Mio**



Crisis during the 1990s



- Loss of 40'000 jobs
- More than 500'000 m2 unused office space
- Appearance of an urban underclass
- Decline of the tax revenue

Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 7

1999/2000: Beginning of the reurbanisation



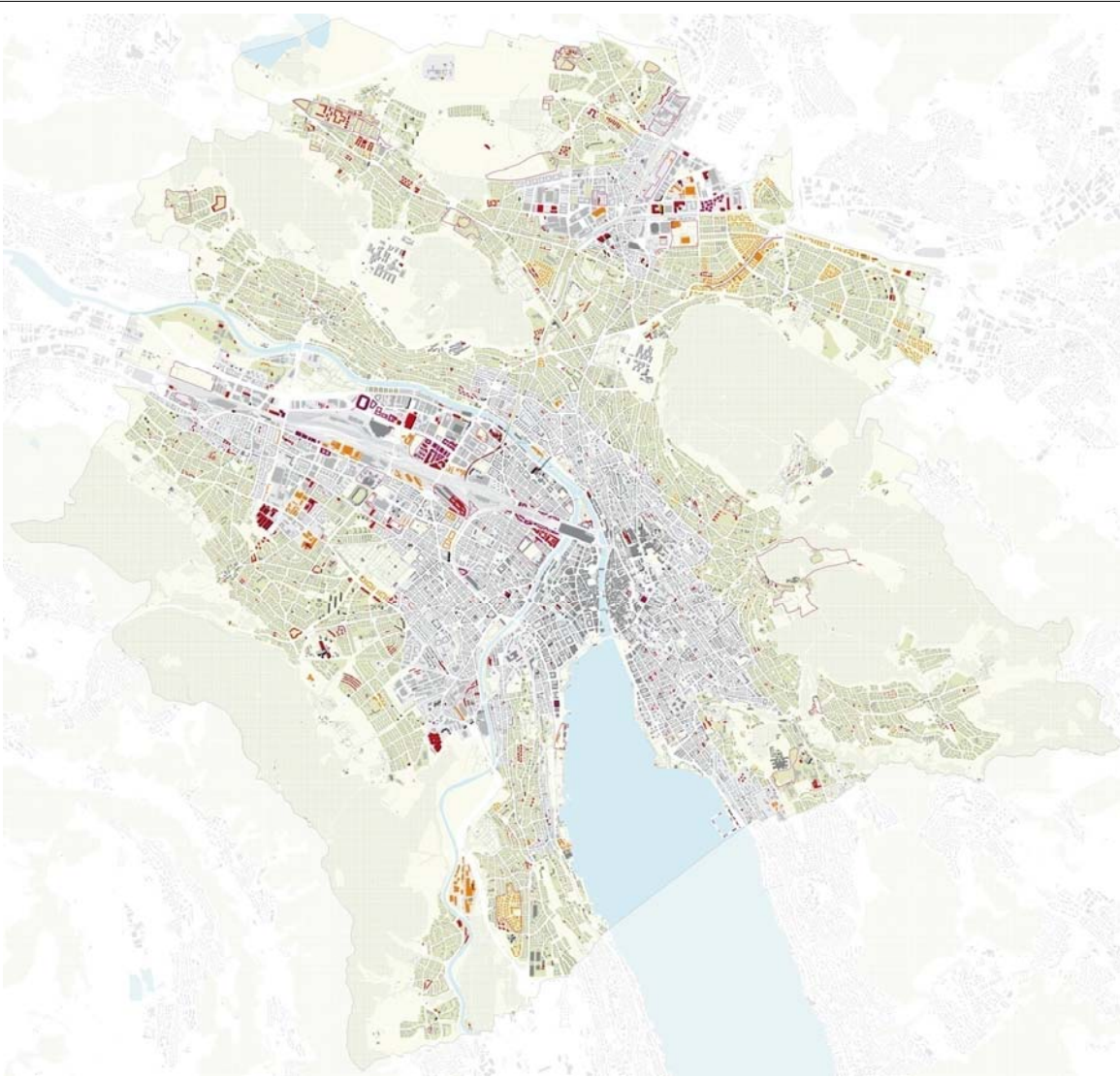
- City-marketing
- Housing for families: Aim: 10'000 flats within 10 years
- Growth of population
- Transformation of industrial zones
- Economic boom

Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 8

+ 20'000 inhabitants within 10 years





Transformation of industrial zones



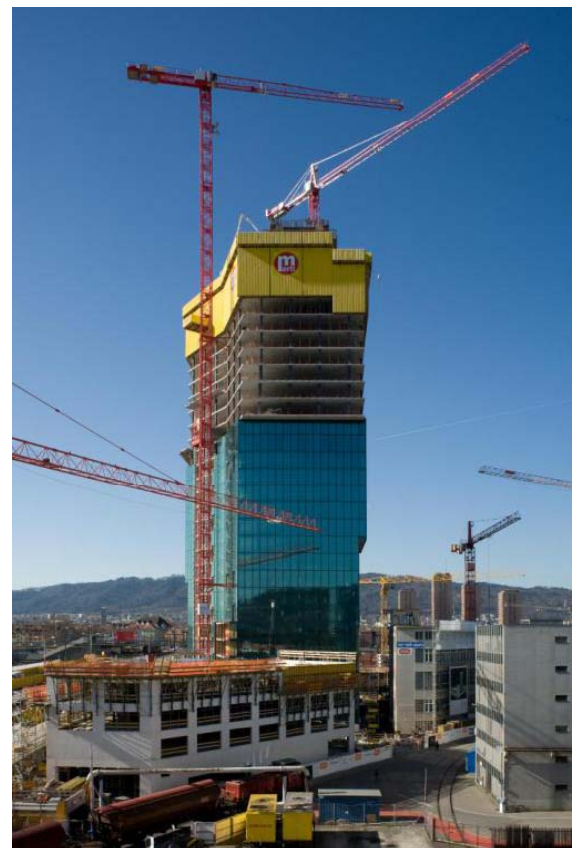
Zürich-West



Renaissance of high-rise buildings generate new skylines

Gigon Guyer Architekten, Zürich

Patrick Gmür Architekten, Zürich



Transformation of infrastructure buildings

EM2N Architekten, Zürich



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 15

Concentration of science and education in former milk-factory

EM2N Architekten, Zürich



Transformation of an old brewery „Löwenbräu-Areal“ Museum, residential building, offices

Gigon Guyer Architekten, Zürich

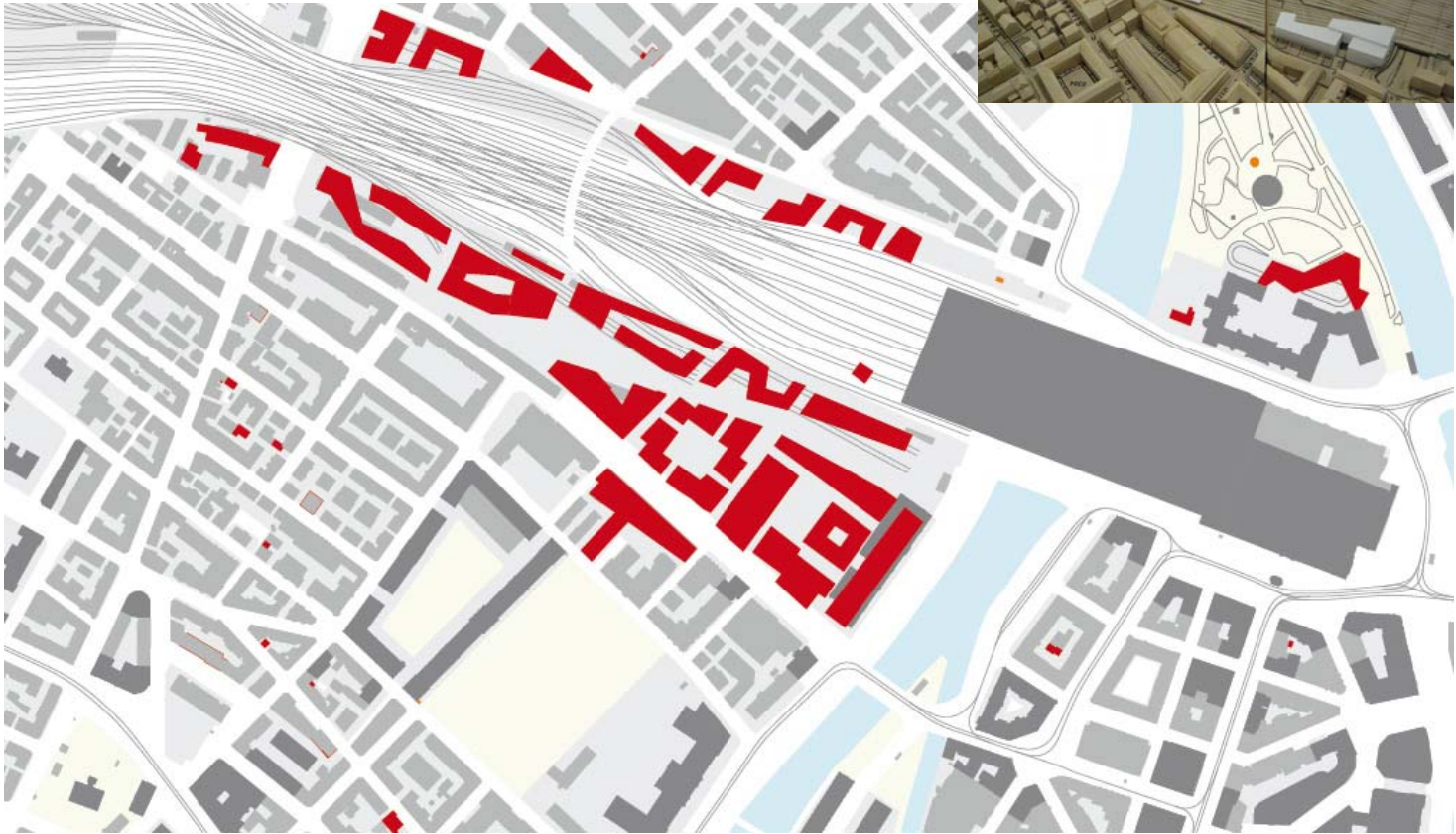


Redevelopment: Zürich Cityspace Main Station Development



Concept plan for the new district

Masterplan: Kees Christiaanse, Rotterdam NL



A new urban district in the center of Zürich

Graber Pulver Architekten, Bern



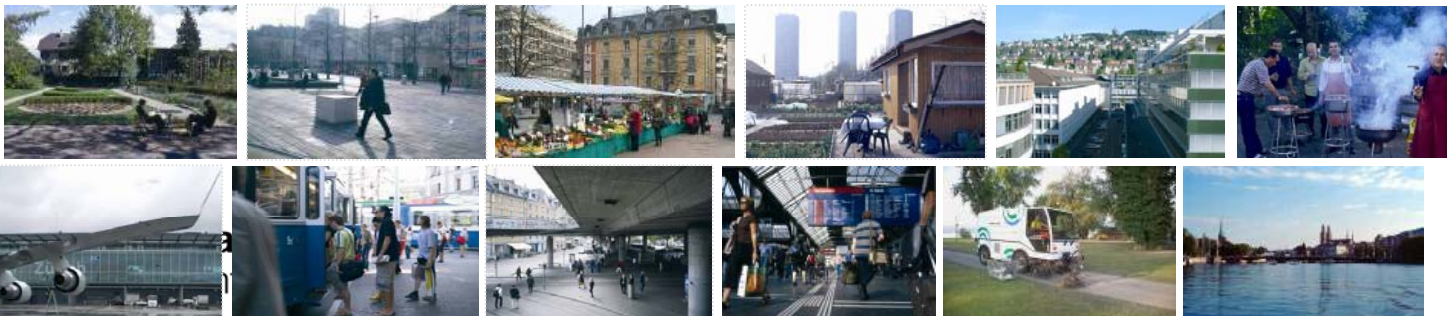


Unique Spatial Positions

The art of remaining Zurich as a sustainable city ...

Compact System

- *Variety* of different Uses
- *Discreet* Urbanity
- *Liveable* Openness
- *Efficient* Networks
- *Extraordinary* Quality of Location



„Variety of different Uses“



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 23

„Discreet Urbanity“



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 24



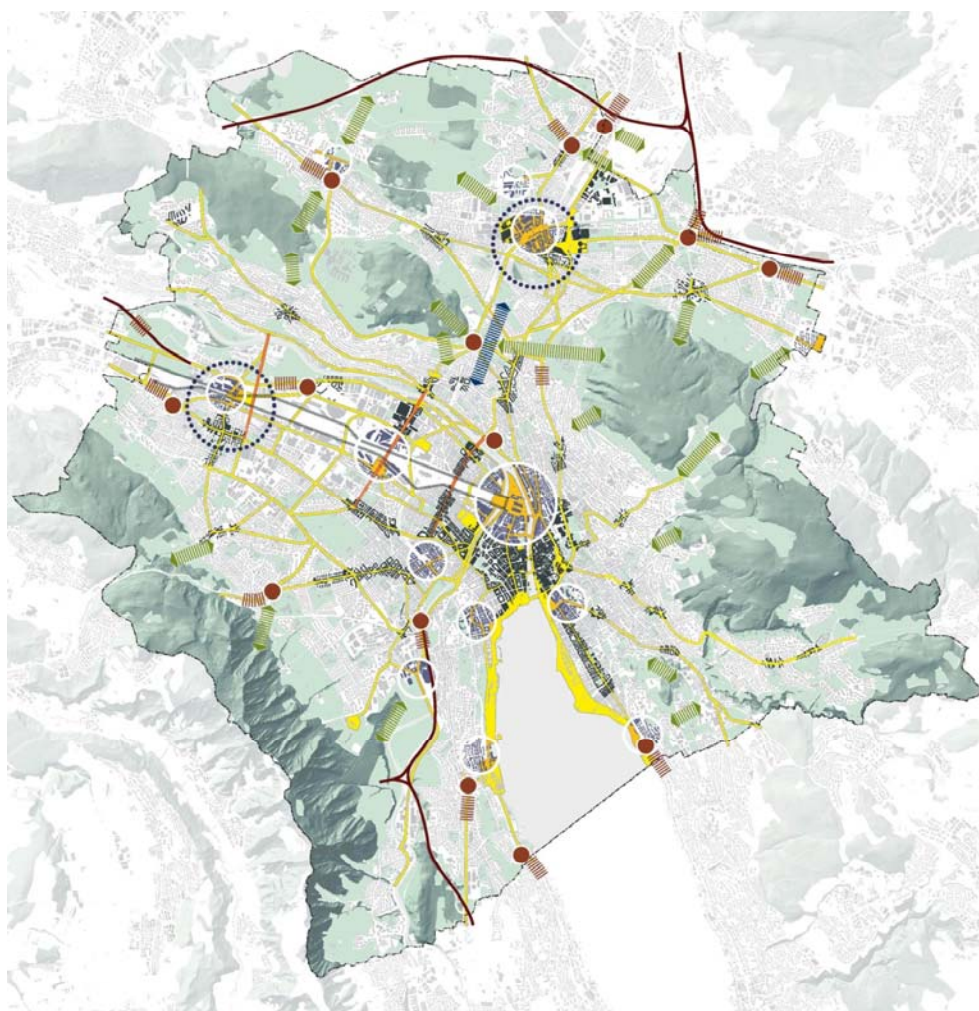
Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 25

Kunsthhaus Zürich – New museum Discreet, but high quality architecture

David Chipperfield Architects, London UK





Räumliche Entwicklungsstrategie RES

Teilstrategie 6: Die Attraktivität des öffentlichen Raums erhöhen

Ausgangslage

- Autobahn
- Grünräume

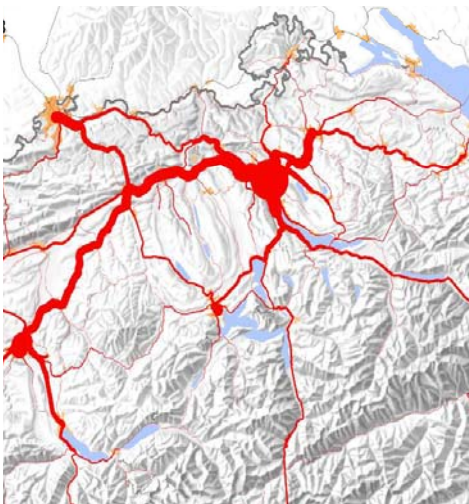
Strategie

- Bahnhöfe und andere wichtige ÖV-Knoten aufwerten
- Ankunfts- und -räume verdeutlichen
- Stadtteilzentren optimal anbinden und aufwerten
- Bindeglied Milchbuck aufwerten
- Grün- und Erholungsräume anbinden
- Prägende Querverbindungen aufwerten
- Prägende öffentliche Stadträume aufwerten (Stadträume wichtiger Bewegungsachsen plus Stadträume von internationaler Bedeutung gemäss Bedeutungsplan müssen im Rahmen einer Vertiefungsstudie verifiziert werden.)
- Quartierzentren aufwerten
- Gleisfeld erlebbar machen



„Efficient Networks“

Railway-, Tram- & Bus-Systems as a „pump“



European & National
Train Connections:



Integrated regional
Train- and Bus-System



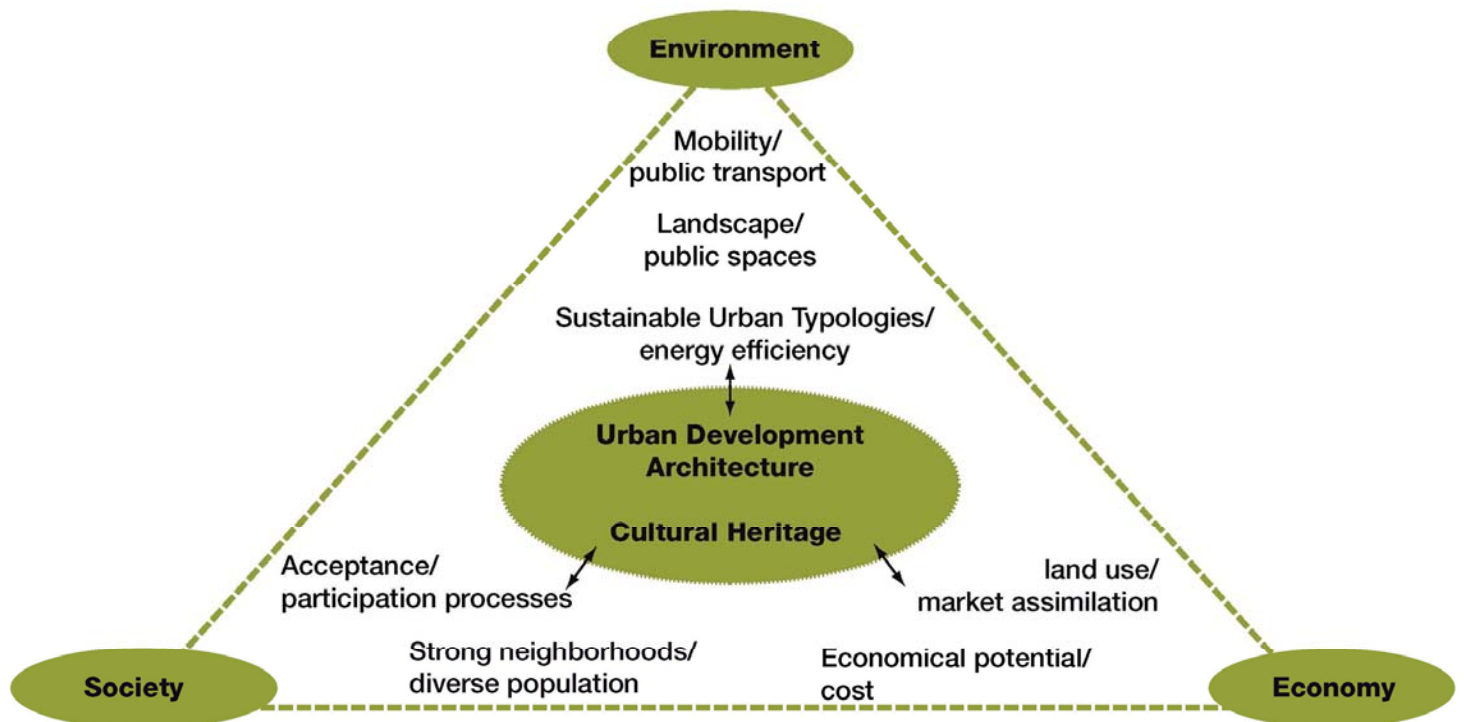
Local Tram-, Bus- and
Boat-System

Synchronized timetables guarantee that all the networks reach into each other clockwork-like and offer low-emission public transportation to the public.



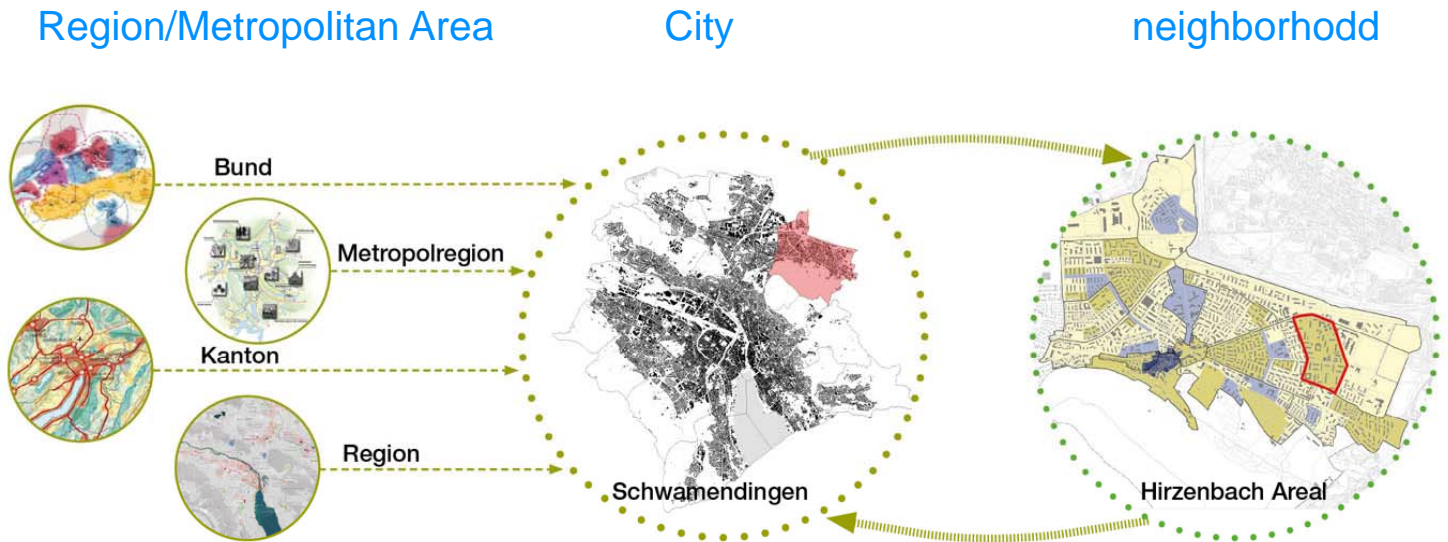
„Extraordinary Quality of Location“

Sustainability in the field of urban planning, Criteria



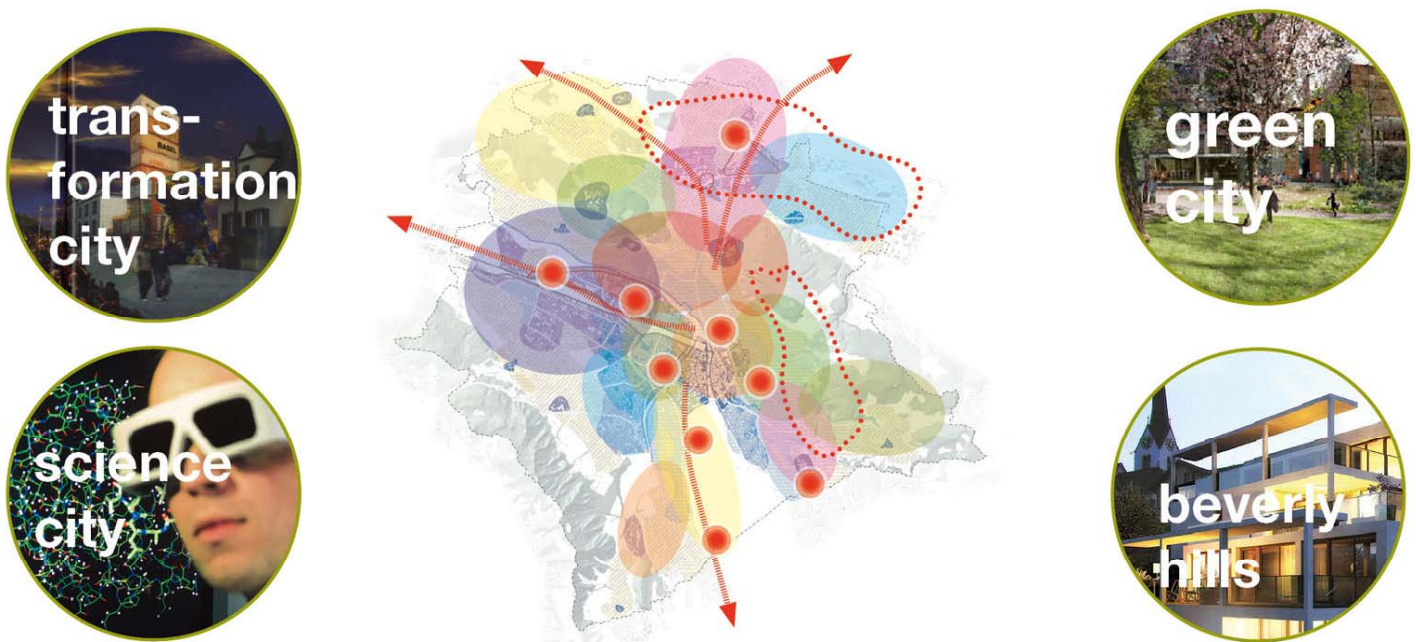
Sustainability in the City of Zürich means

...considering demand and interaction from **regional, city-wide, neighborhood** and **site** specific point of view



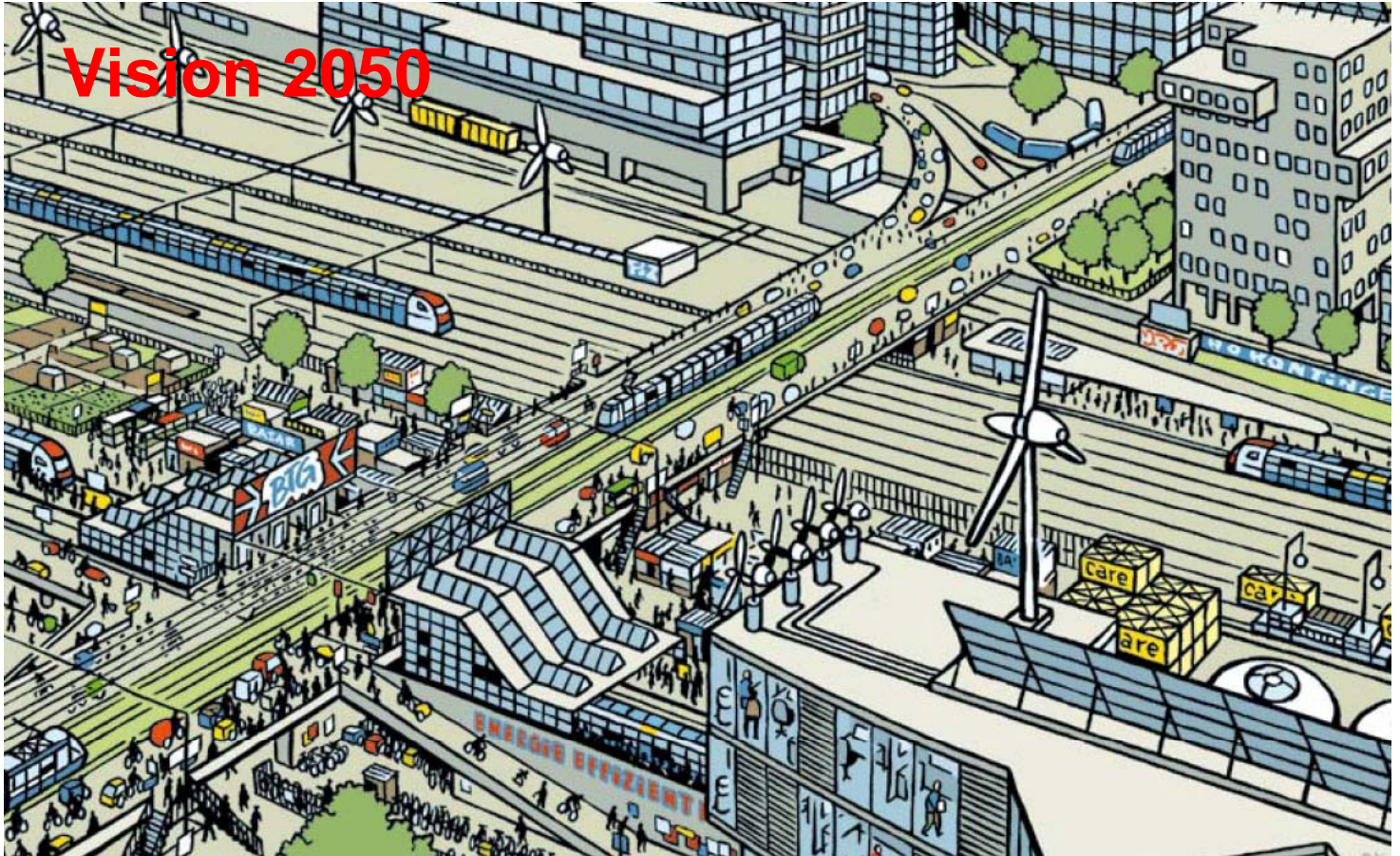
Sustainability in the City of Zürich means

....promoting a **polycentric city** with functional and characteristic neighborhoods



Sustainability in the City of Zürich means

...coordinating land use and mobility towards an **urban mobility system**



Sustainability in the City of Zürich means

...designing and upgrading **attractive and functional public spaces** to enhance high qualities for the population as well as the urban ecological system

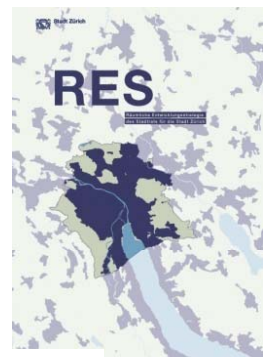


Sustainability in the City of Zürich means

...defining **processes** which balance different interests - especially taking into account **population values**



The spacial development strategy 2025



1 science and economy

2 city for high quality residential development

8. cooperation in regional context

7. mobility

land use
density
cityscape

3. recreation and culture

4. sustainable development of the urban fabric

6. high quality public space

5. keep quality of landscape areas

Science and Economy

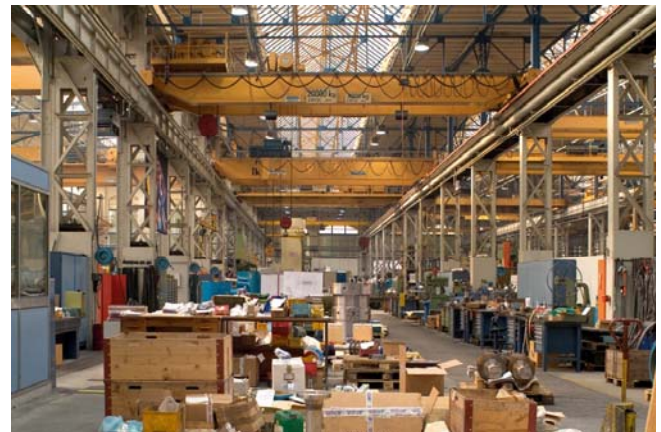
Location for research

Financial centre and location of services

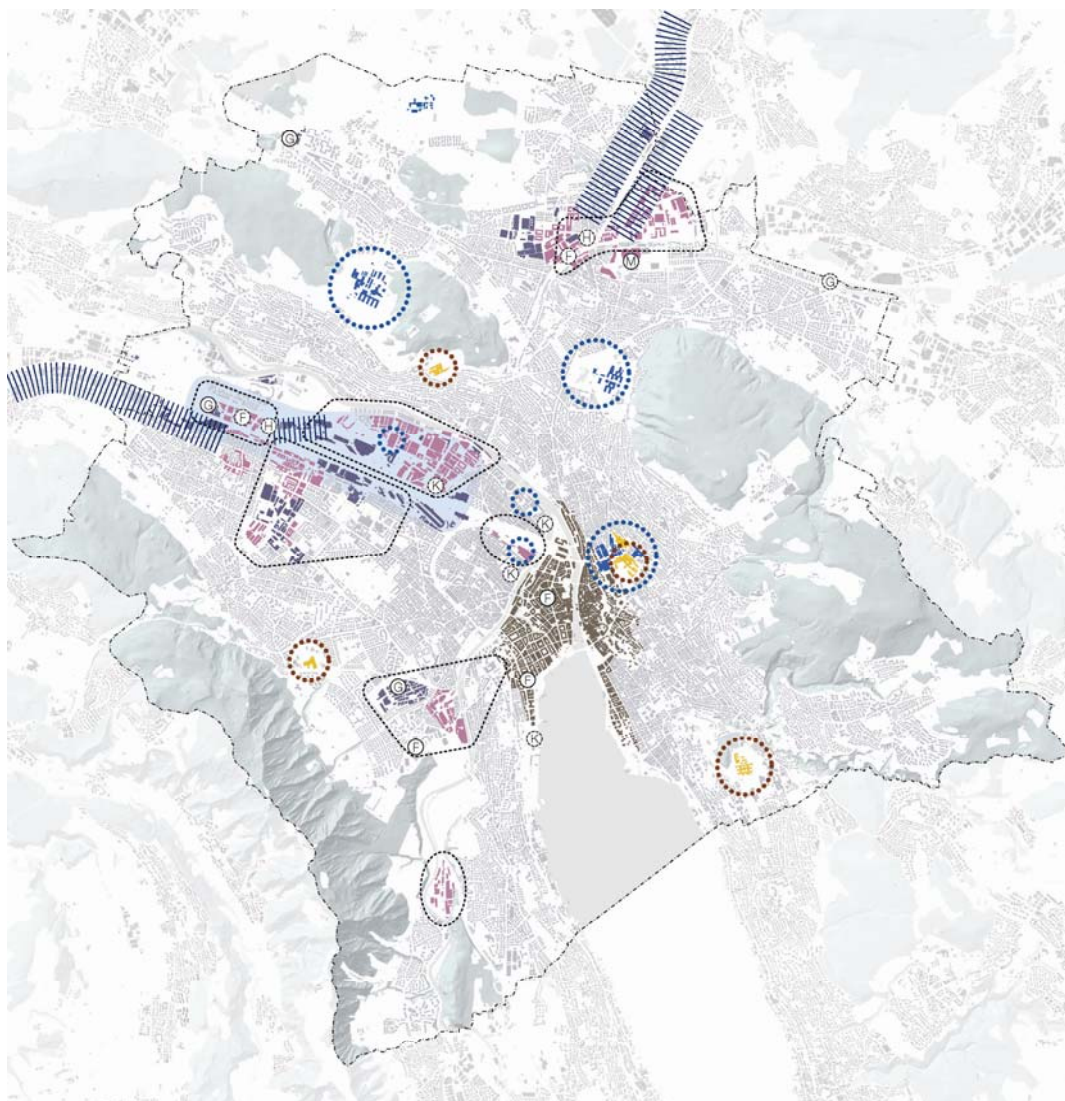
High quality industries (clean tech, high tech)



Stadt Zürich
Amt für Städtebau



Climate KIC Summer-School 2010, August 5th, 2010
Page 39



Räumliche Entwicklungsstrategie RES

Teilstrategie 1: Raum für den Wirtschafts- und Wissensstandort gewährleisten

Ausgangslage

- Hochschulstandort
- Spitalstandort
- City
- Mischgebiete (Zentrumszonen)
- Arbeitsplatzgebiete
- Mehrheitlich Wohnen

Strategie

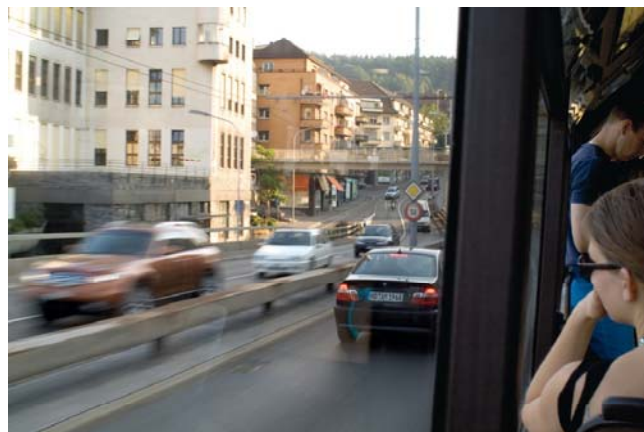
- Hochschulstandort ausbauen
- Gesundheitsschwerpunkt ausbauen
- Entwicklungsgebiete: Potenziale ausschöpfen
- Neue Potenzialräume nutzen
- Schwerpunkt Innovationsstandort schaffen
- Entlastungsstandort für Hochschulen sichern
- Gewerbe halten
- Gewerbestandort entwickeln
- Finanz- und Dienstleistungsstandort halten
- Finanz- und Dienstleistungsstandort entwickeln
- Messestandort halten, Erweiterungsmöglichkeiten sichern
- Mögliche Standorte für neues Kongresszentrum

Mobility

New tangential connections

City of short distances

Coexistence instead of separation



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 41

Sustainable development of the urban fabric

Sustaining existing fabric

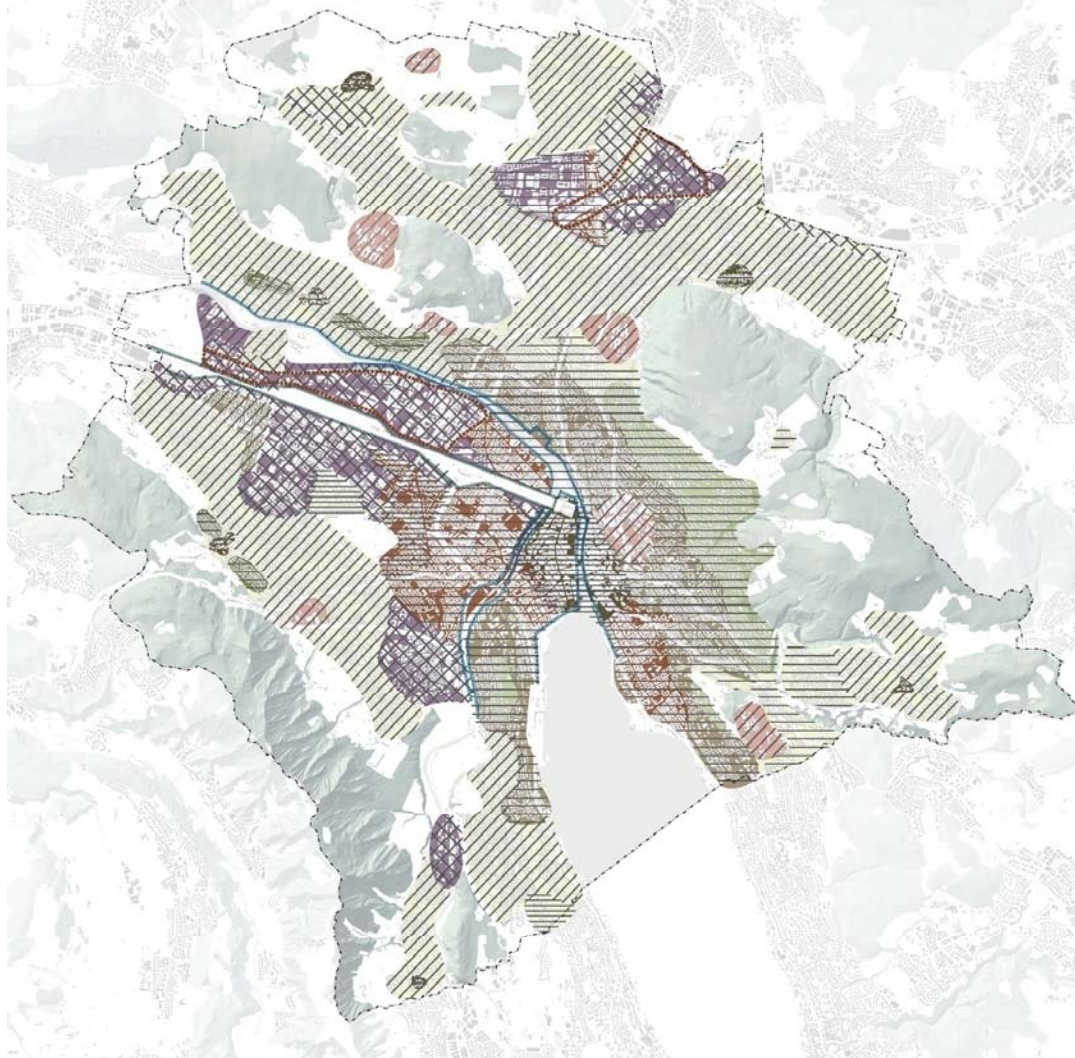
Developing and recreating in parts

Restructuring entire areas



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 42



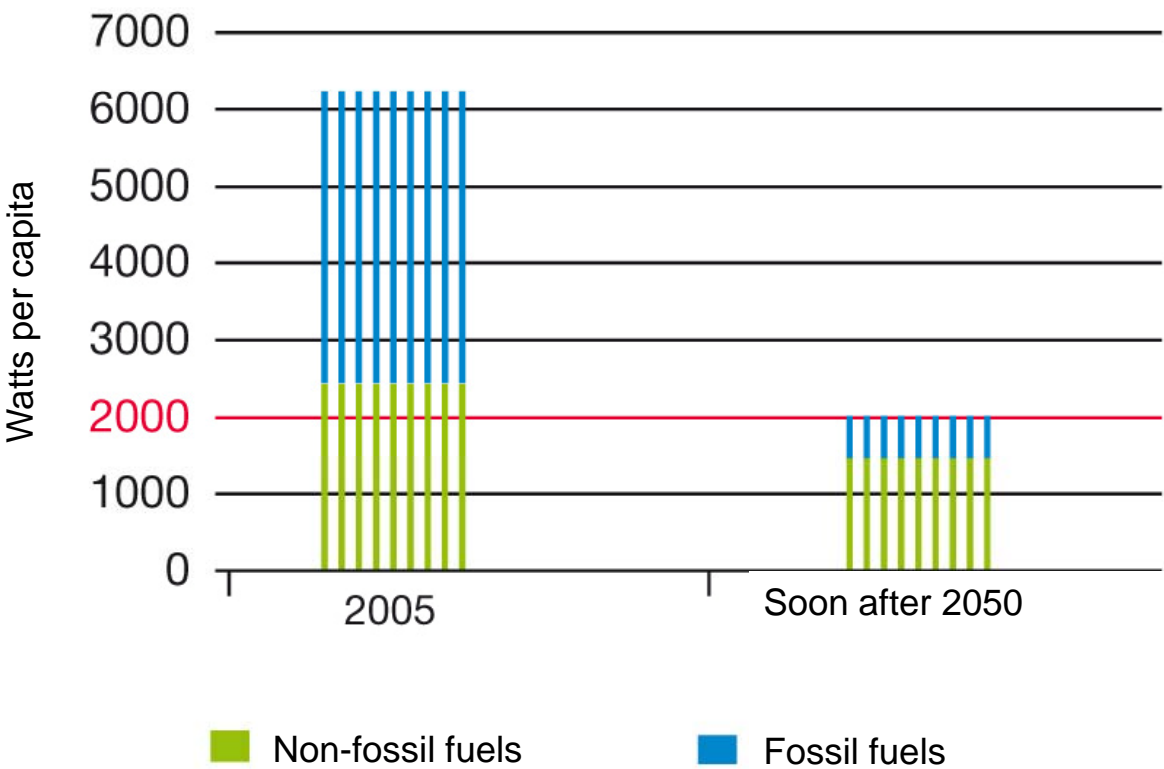
Climate analysis and areas of intervention



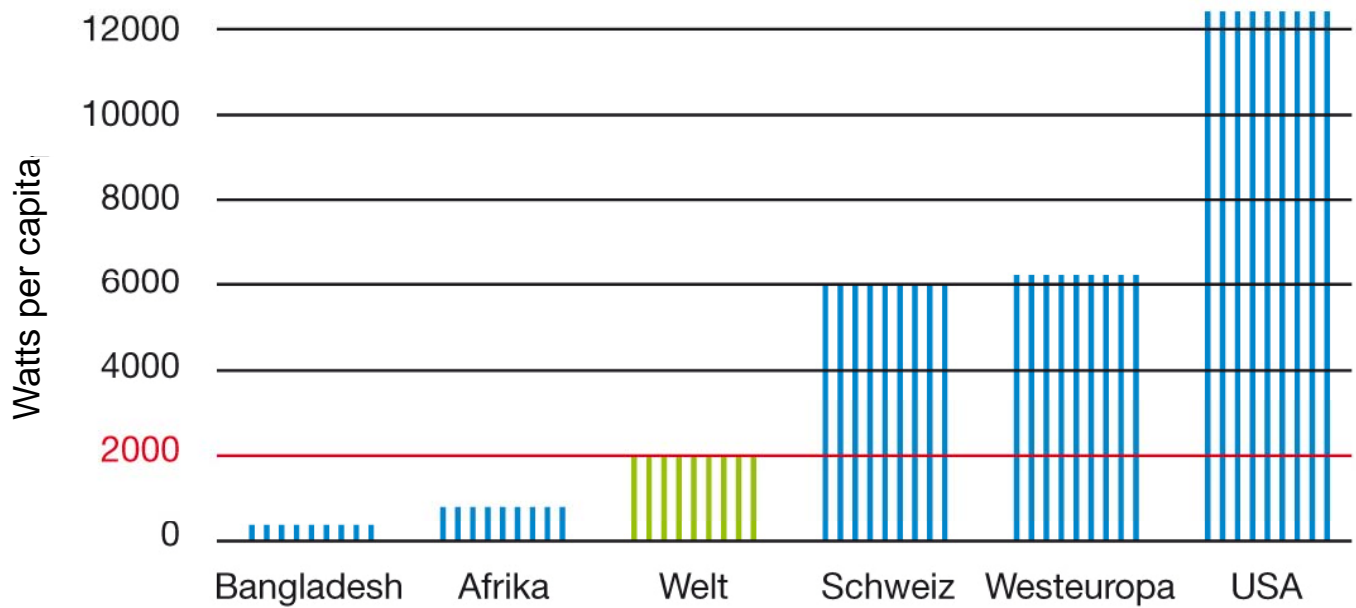
Zürich's path towards the 2000-watt-society



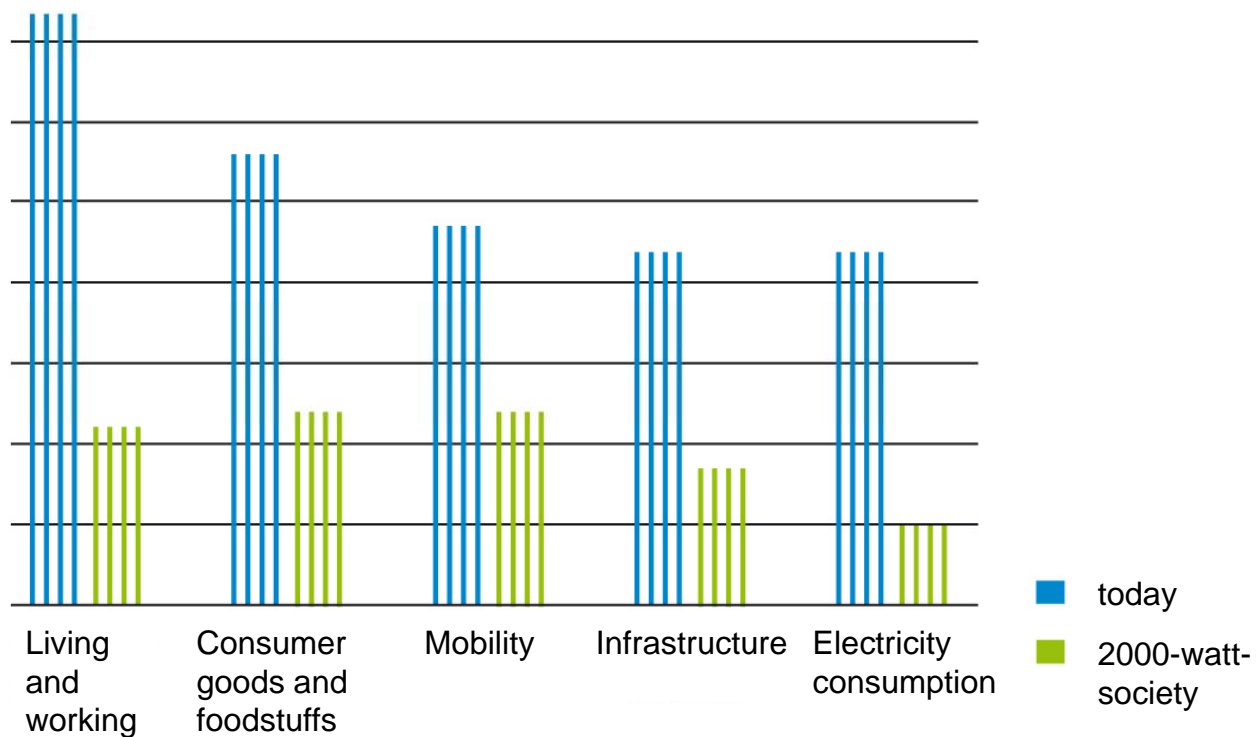
Energy requirement Zürich



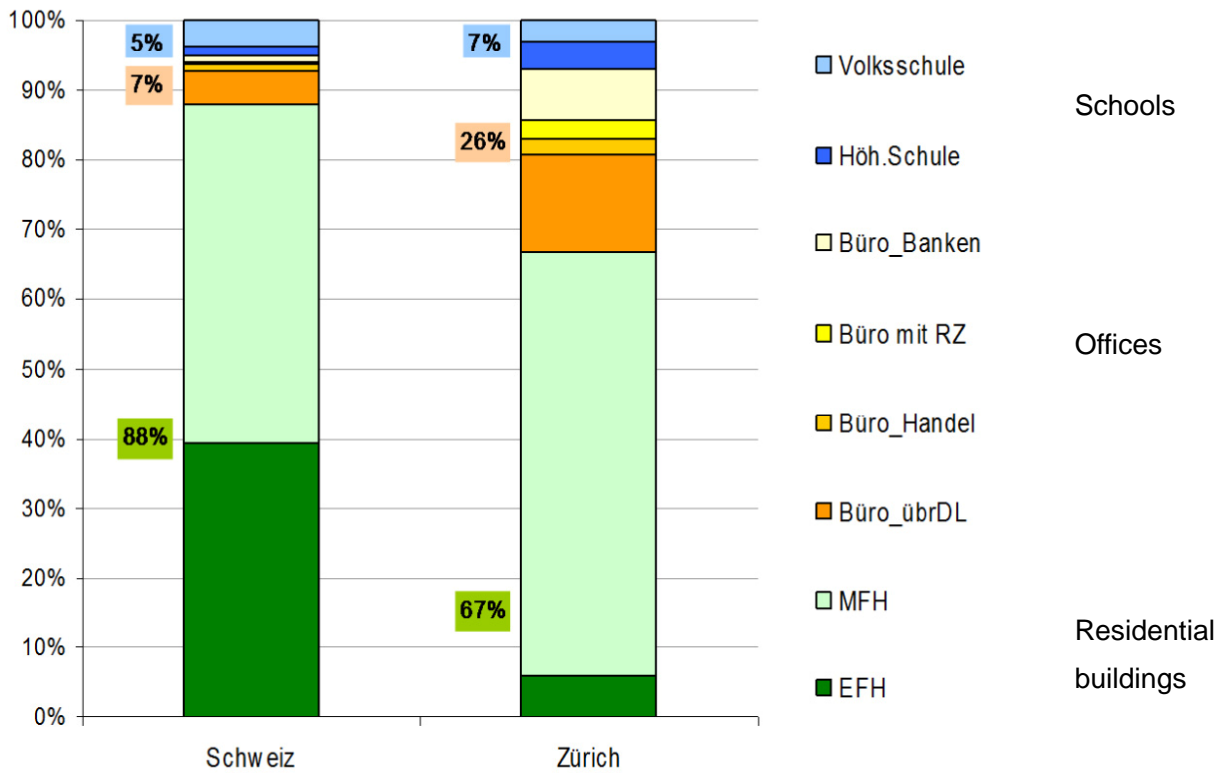
Energy requirement in the world



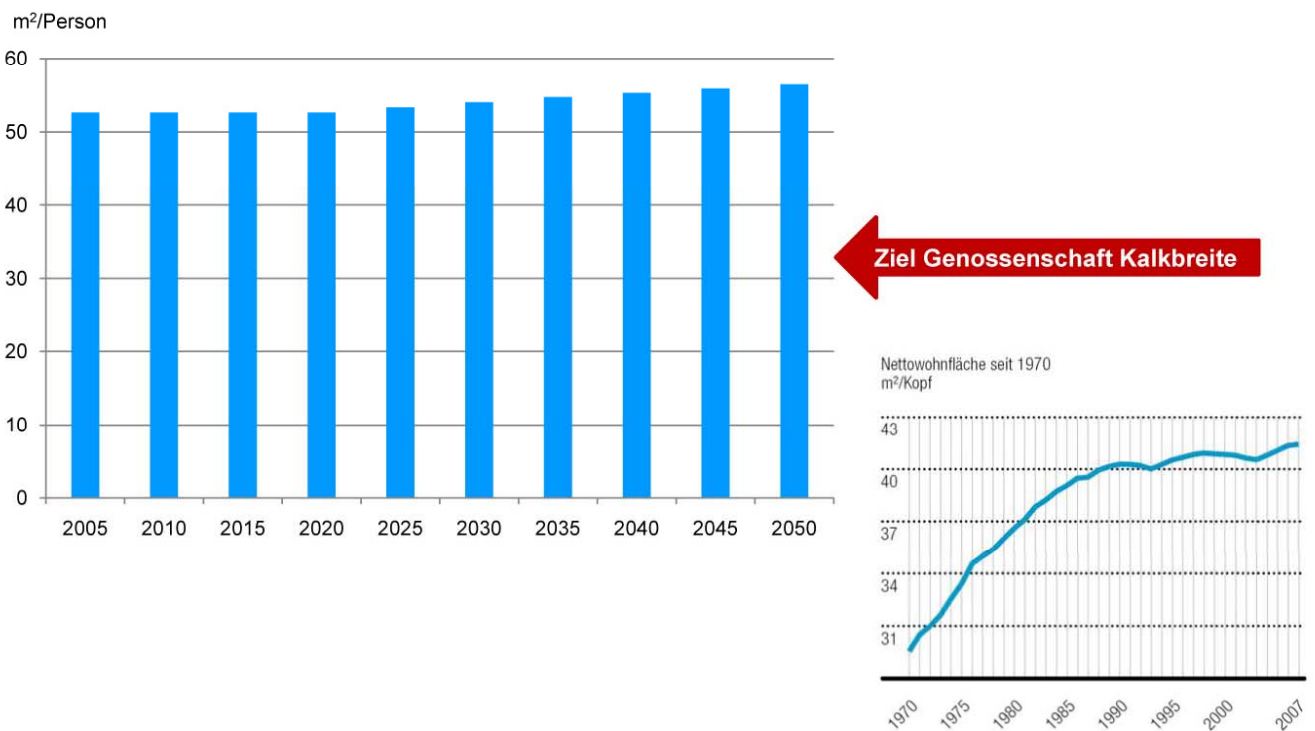
Comparison of the energy requirements today versus the envisioned 2000-watt-society



All buildings classified in type of use



Living space per capita





SUSTAINABLE BUILDING

STANDARDS FOR ENVIRONMENTALLY FRIENDLY AND ENERGY EFFICIENT BUILDINGS

City Council resolution Nr. 1094, September 17, 2008

This program is a continuation of the City of Zurich's earlier pioneer role in the field of environmental protection and sustainable development. It outlines the Building Department's priorities. The program's aims are to:

- > Determine the energy standard for municipal buildings according to the Master Energy Plan. www.stadt-zuerich.ch/energie
- > Prepare the path towards the 2000 Watt society as a longterm perspective. www.stadt-zuerich.ch/lsp
- > Provide a far-reaching stimulus to the sustainable development of the city's municipal buildings.

To achieve these aims, a comprehensive course of action is necessary which will take into account social and economic aspects, too, according to the criteria listed in SIA recommendation 112/1.

Contacts in the Building
Department for municipal buildings
www.stadt-zuerich.ch/hochbau

Amt für Hochbauten
Lindenhofstrasse 21
Postfach, 8021 Zürich

Section Sustainable Building
Dr. Heinrich Gugerli
Tel. 044 412 26 81
heinrich.gugerli@zuerich.ch

Section Energy and
Building Services
Franz Sprecher
Tel. 044 412 44 48
franz.sprecher@zuerich.ch

Environment Deputy AHB
Christian Hardmeier
Tel. 044 412 21 23
christian.hardmeier@zuerich.ch

Immobilien-Bewirtschaftung
Lindenhofstrasse 21
Postfach, 8021 Zürich

Environment Deputy IMMO
Cornelia Mächler
Tel. 044 412 27 12
cornelia.maechler@zuerich.ch

PRINCIPLES FOR MUNICIPAL BUILDINGS

- > Our buildings must meet high **functional specifications**. The needs of future users are at the top of our list of priorities.
- > The buildings must be **cost effective** in both construction and operation. The economic efficiency has to be considered.
- > Public buildings have to be **ecologically sustainable and durable**. This applies to materials and constructions, as well as adaptability for changing needs.
- > Buildings must have high **architectural and urban planning qualities**. These demands in no way conflict with the first requirements.

„Mile Steps“ for environmentally friendly and energy efficient building

1. New Buildings

New buildings are to achieve the MINERGIE-ECO standard

2 Existing Buildings

For refurbishments, the standard for MINERGIE modernisation must be implemented as first priority.

3 More efficient use of electrical power

All new and refurbished non-residential buildings will meet the additional MINERGIE specifications for lighting. First priority will be given to the procurement of highly efficient office and household appliances.

4 Renewable energy sources

At least 40% of the total heating requirements of new buildings are to be provided by renewable energy sources. For existing buildings it is 50% of the heating for warm water.

Example new residential building „Kalkbreite“

- social housing project
- label „Minergie P“, 2000watt-compatible
- low living space (30-40 m²)
- mixed use
- massive reduce of parking space

Müller Sigrist Architekten, Zürich



Example „Triemli Hospital“

- Renewal supply of energy
- building: label „minergie P“
- reduce consumption of electricity
- optimize accessibility by public transport

Aeschlimann Prêtre Hasler Architekten AG, Zürich



Example new residential building „Badenerstrasse“

- first wood-constructed building (top-wall-system)
- label: SIA Effizienzpfad, 2000Watt
- social housing project

Pool Architekten, Zürich



The New Monte Rosa Hut

ETH Zürich, Studio Monte Rosa



The first Monte Rosa Hut

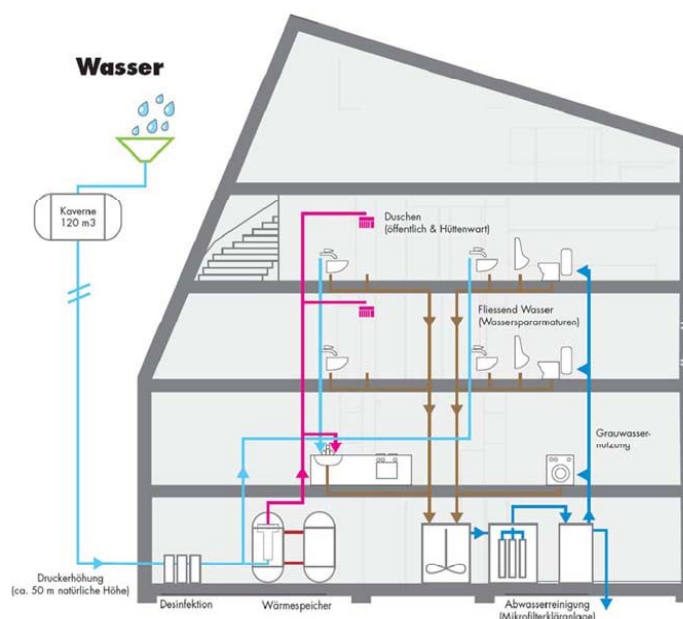
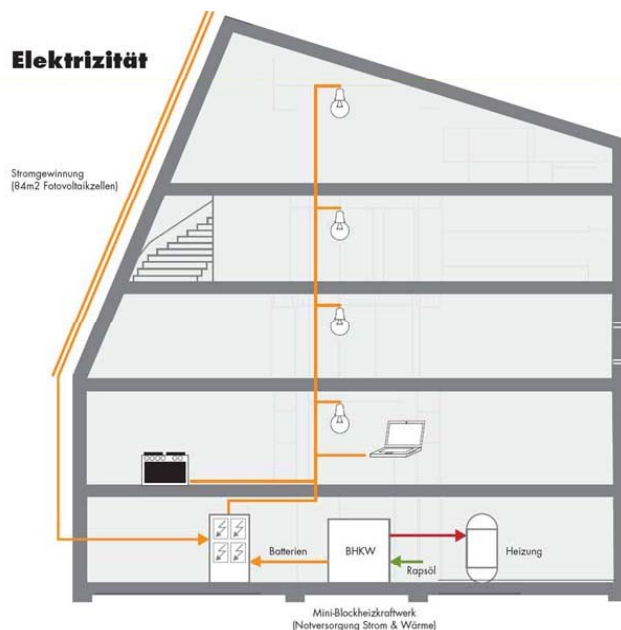


The New Monte Rosa Hut

- Join project of ETH Zürich and SAC (swiss alpine club)
- The project shows exemplary architectural character in the field of energy and resource efficiency
- Energetically to 90% self-contained and self-sufficient (90% autarchy)
- CO₂-emissions will be reduced by more than two-thirds per night
- Use of renewable energies and seasonal storage and multiple use of water

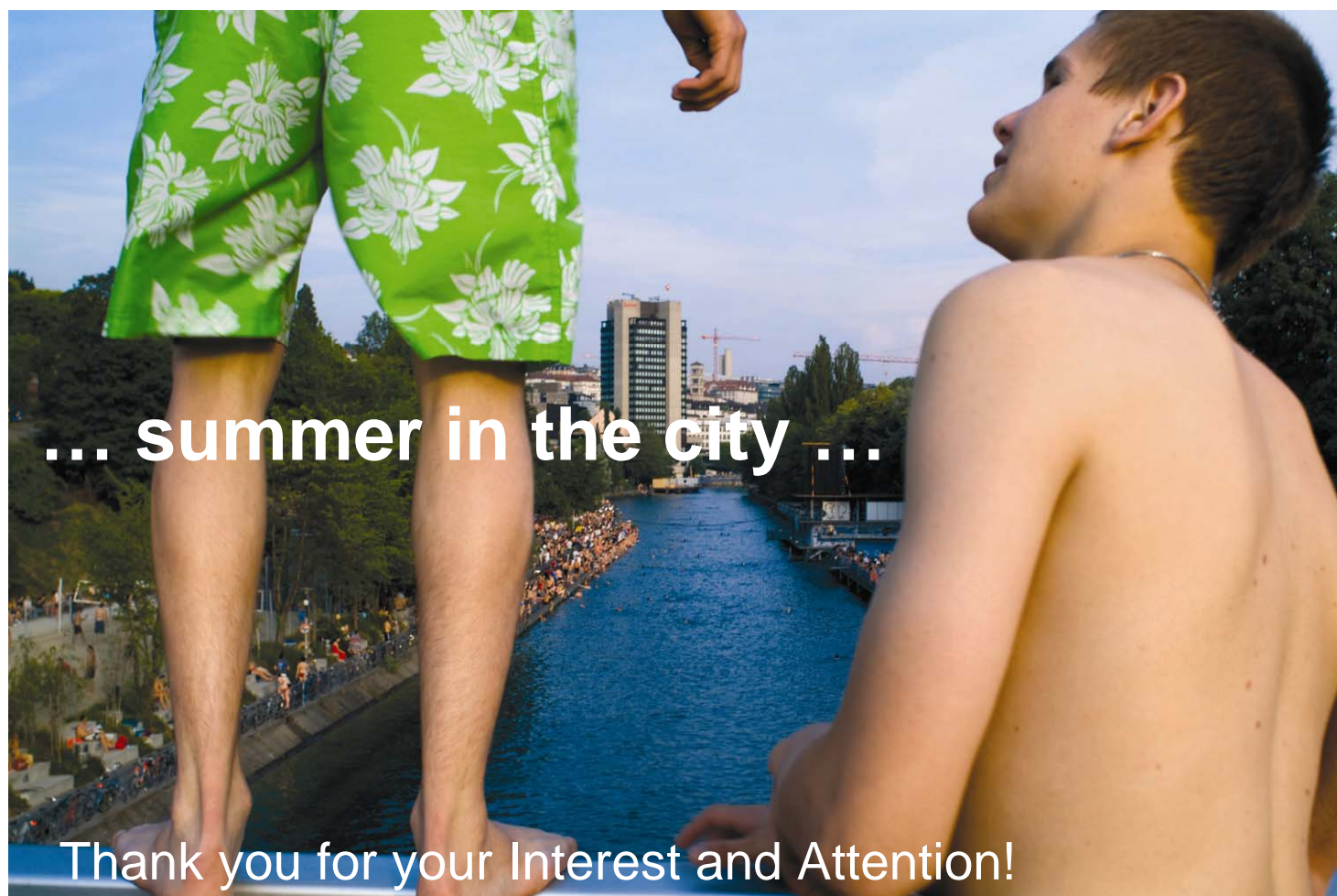


The New Monte Rosa Hut Electricity and water



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 59



Stadt Zürich
Amt für Städtebau

Climate KIC Summer-School 2010, August 5th, 2010
Page 60